

AFFINITY FLUORESCENT PROTEINS AND USES THEREOF
ABSTRACT OF THE DISCLOSURE

The present invention is related to an affinity fluorescent protein (aFP) comprising a modified fluorescent protein or molecule which comprises a heterologous amino acid sequence, thereby introducing a ligand-activated protein binding site, wherein the modified fluorescent protein displays an altered spectral property when the binding site is engaged with ligand relative to the spectral property displayed when the binding site is not engaged by ligand. The present invention also relates to an aFP expression cassette comprising a modified fluorescent protein nucleic acid sequence operatively linked to expression control sequences, wherein the modified fluorescent protein sequence comprises a recombinant peptide which comprises restriction endonuclease sites; and a host cell, comprising a recombinant nucleic acid molecule which comprises expression control sequences operatively linked to nucleotide sequence encoding an aFP, wherein said aFP comprises modified GFP molecule which comprises a mutated GFP molecule and a heterologous amino acid sequence which functions as a ligand-activated protein binding site, wherein the aFP an altered spectral property when the binding site is engaged with ligand relative to the spectral property displayed when the binding site is not engaged by ligand. The present invention also relates to a method of detecting the presence of a target ligand in a mixture of macromolecules. Also encompassed by the present invention is a method of a method of detecting the occurrence of a target ligand in a cell (*e.g.*, a macrophage, a yeast cell).

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